

# Claims

[c1] What is claimed is:

1.A method for translating data packets from one network protocol to another, said method comprising:  
constructing a plurality of translation templates;  
loading said plurality of translation templates into a translation template cache;  
in response to a data packet from a first network arriving at a translation router, selecting an appropriate one of said plurality of translation templates from said translation template cache according to the translation context of said data packet;  
generating a new header for transmission into a second network by reading header fields of said data packet from said first network along with said appropriate one of said plurality of translation templates in said translation template cache;  
removing data payload of said data packet from said first network from its header;  
appending said data payload of said data packet to said constructed header for said second network; and  
transmitting said data packet to said second network.

- [c2] 2.The method of Claim 1, wherein said plurality of translation templates includes translation templates for Fibre Channel, translation templates for Ethernet and translation templates for InfiniBand.
- [c3] 3.The method of Claim 1, wherein said translation template cache is a dedicated on-chip memory.
- [c4] 4.The method of Claim 1, wherein said selecting further includes selecting an appropriate one of said plurality of translation templates from said translation template cache according to an incoming port number from which said data packet comes.
- [c5] 5.The method of Claim 1, wherein said generating further includes generating a new header for transmission into a second network according to an outgoing port number to which said data packet is to be transmitted.
- [c6] 6.An apparatus for translating data packets from one network protocol to another, said apparatus comprising:
  - means for constructing a plurality of translation templates;
  - means for loading said translation templates into a translation template cache;
  - in response to a data packet from a first network arriving into a translation router, means for selecting an appro-

priate translation template from said translation tem-  
plate cache according to the translation context of said  
data packet;  
means for generating a new header for transmission into  
a second network by reading header fields of said data  
packet from said first network along with said appropri-  
ate translation template in said translation template  
cache;  
means for removing data payload of said data packet  
from said first network from its header;  
means for appending said data payload of said data  
packet to said constructed header for said second net-  
work; and  
means for transmitting said data packet to said second  
network.

- [c7] 7.The apparatus of Claim 6, wherein said wherein said plurality of translation templates includes translation templates for Fibre Channel, translation templates for Ethernet and translation templates for InfiniBand.
- [c8] 8.The apparatus of Claim 11, wherein said translation template cache is a dedicated on-chip memory.
- [c9] 9.The apparatus of Claim 11, wherein said means for se-  
lecting further includes means for selecting an appropri-  
ate one of said plurality of translation templates from

said translation template cache according to an incoming port number from which said data packet comes.

- [c10] 10. The apparatus of Claim 11, wherein said means for generating further includes means for generating a new header for transmission into a second network according to an outgoing port number to which said data packet is to be transmitted.
- [c11] 11. A computer program product residing on a computer usable medium for translating data packets from one network protocol to another, said computer program product comprising:
  - program code means for constructing a plurality of translation templates;
  - program code means for loading said translation templates into a translation template cache;
  - in response to a data packet from a first network arriving into a translation router, program code means for selecting an appropriate translation template from said translation template cache according to the translation context of said data packet;
  - program code means for generating a new header for transmission into a second network by reading header fields of said data packet from said first network along with said appropriate translation template in said translation template cache;

program code means for removing data payload of said data packet from said first network from its header; program code means for appending said data payload of said data packet to said constructed header for said second network; and program code means for transmitting said data packet to said second network.

- [c12] 12.The computer program product of Claim 11, wherein said plurality of translation templates includes translation templates for Fibre Channel, translation templates for Ethernet and translation templates for InfiniBand.
- [c13] 13.The computer program product of Claim 11, wherein said translation template cache is a dedicated on-chip memory.
- [c14] 14.The computer program product of Claim 11, wherein said program code means for selecting further includes program code means for selecting an appropriate one of said plurality of translation templates from said translation template cache according to an incoming port number from which said data packet comes.
- [c15] 15.The computer program product of Claim 11, wherein said program code means for generating further includes program code means for generating a new header for

transmission into a second network according to an outgoing port number to which said data packet is to be transmitted.